AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) On-line detection method comprising the on-line coupling of an ~~the~~ effluent of a fractionation step to a mass spectrometer, in which the method comprises the addition of a known ~~controlled~~ amount of ~~an~~ affinity molecules to the ~~an~~ effluent of the fractionation step, whereby the affinity molecules bind analytes in the effluent, followed by the addition of a known ~~controlled~~ amount of a known ligand capable of binding to the affinity molecule under suitable binding conditions, followed by a separation step to separate ~~the~~ free and bound known ligands and finally detection of either the free or bound known ligands using the mass spectrometer.

2. (Currently amended) On-line detection method according to claim 1, in which the separation step comprises the retention of the free ligand from the effluent using a restricted-access support, whereby a ~~the~~ ligand-affinity molecule complex is permeated, and the bound ligands are detected after being separated from said ligand-affinity molecule complex, which separation comprises ~~in~~ a ~~suitable~~ dissociation step, followed by separation of the ligand from the affinity molecule using a hollow-fiber module, and directing a ~~the~~ permeate stream containing the ligand to the mass spectrometer, wherein ~~in which method~~ the dissociation step is ~~preferably~~ a low pH shock, contacting with a high ionic strength solution, contacting with an organic solvent and/~~or~~ contacting with a chaotropic reagent.

3. (Currently amended) On-line detection method according to claim 1, in which the separation step comprises the retention of a ~~the~~ ligand-affinity molecule complex from the effluent

using a hollow-fiber module, whereby the free ligand is permeated, and a ~~the~~ permeate stream with the free ligand is subsequently directed to the mass spectrometer.

4. (Currently amended) On-line detection method according to claim 1, in which the separation step comprises the retention of the free ligand from the effluent using a restricted-access support, whereby a ~~the~~ ligand-affinity molecule complex is permeated, followed by elution of ~~the~~ unbounded ligands from the restricted-access support using a ~~suitable~~ carrier stream, and directing the eluted stream containing the free ligand to the mass spectrometer.

5. (Currently amended) Method according to any of the preceding claims wherein the fractionation step is a liquid chromatography separation step, a capillary electrophoresis step or a combinatorial chemistry system, which is ~~optionally~~ followed by a separation step which removes the high molecular weight background.

6. (Previously presented) Method according to claim 5, in which the liquid chromatography separation step is a HPLC, a reversed phase HPLC, a CE, a CEC, a IEF or a MEKC step.

7. (Currently amended) Method according to any one of the preceding claims, wherein the mass spectrometer is ~~of the type~~ chosen from the group consisting of electrospray ionization type, atmospheric pressure ionization type, quadrupole type, magnetic sector type, time-of-flight ~~time-off flight~~ type, MS/MS, MS^n, FTMS type, ion trap type and combinations thereof.

8. (Previously presented) Method according to any one of the preceding claims, in which the mass spectrometer is set to detect ions of a selected single m/z trace or of selected multiple m/z traces.

9. (Previously presented) Compound detected by the method of any one of the preceding claims.

10. (Cancelled)